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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,466	04/13/2004	David Mills	DKT 03047A (BW1-00085)	4606
7590	06/01/2006		EXAMINER DEVORE, PETER T	
BorgWarner Inc. Patent Administrator 3850 Hamlin Road Auburn Hills, MI 48326-2872			ART UNIT 3751	PAPER NUMBER

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/823,466	<b>Applicant(s)</b> MILLS ET AL.	
	<b>Examiner</b> Peter deVore	<b>Art Unit</b> 3751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15-24 and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-24 and 26-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6, 8, 15, 16, and 19 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 6, 7, 9, 10, 12, and 15 of copending Application No. 10/821,740. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons. Instant claim 1 is identical to copending claim 1 except for two differences. First, the "radially and axially extending wall" language in instant claim 1 is replaced with "flying buttress" language in the copending claim 1. These two recitations are deemed to have substantially the same scope and are thus not patentably distinct.

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Second, copending claim 1's valve seat is "made of a plastic material". It would have been obvious to make the valve seat of instant claim 1 out of a plastic material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Instant claim 2 is identical to copending claim 2 and both depend from their respective claim 1's. Instant claim 3 is slightly broader than copending claim 3 (and is thus patentably indistinct therefrom) and both depend from their respective claim 2's. Instant claims 4-6 and 8, respectively are identical to copending claims 4, 6, 7, and 8, respectively and depend in similar fashion from their respective claim 3's. Instant claim 15 is slightly broader than copending claim 10 and is therefore patentably indistinct therefrom. Instant claims 16 and 19, respectively are identical to copending claims 12 and 15, respectively and depend in similar fashion from instant claim 15 and copending claim 10.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13, 15-24, and 26-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the fluid control body has “a pressure supply passage at a first end” and “a radially extending pressure control passage”. However, the disclosed “supply passage” 18 appears to extend radially via part 28 and the disclosed “control passage” 20 appears at one end (see Figs. 1 and 4), opposite from how claimed. It is unclear how the claim is intended to read on the specification, the claim is thus indefinite.

Claim 7 recites the limitations “the fluid supply passage” in line 1-2 and “said fluid control passage” in line 2. There is insufficient antecedent basis for these limitations in the claim.

Claim 10 recites the limitation “said coil member” in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites that the fluid control body has “a pressure supply passage at a first end” and “a radially extending pressure control passage”. However, the disclosed “supply passage” 18 appears to extend radially via part 28 and the disclosed “control passage” 20 appears at one end (see Figs. 1 and 4), opposite from how claimed. It is unclear how the claim is intended to read on the specification, the claim is thus indefinite.

Claim 18 recites the limitations “the fluid supply passage” in line 1-2 and “said fluid control passage” in line 2. There is insufficient antecedent basis for these limitations in the claim.

Claim 21 recites the limitation “said coil member” in line 2. There is insufficient antecedent basis for this limitation in the claim.

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Claim 26 recites that the fluid control body has "a pressure supply passage at a first end" and "a radially extending pressure control passage". However, the disclosed "supply passage" 18 appears to extend radially via part 28 and the disclosed "control passage" 20 appears at one end (see Figs. 1 and 4), opposite from how claimed. It is unclear how the claim is intended to read on the specification, the claim is thus indefinite.

Claim 27 recites the limitations "the fluid supply passage" in line 1-2 and "said fluid control passage" in line 2. There is insufficient antecedent basis for these limitations in the claim.

Claim 30 recites the limitation "said coil member" in line 2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 7, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greiner.

The Greiner reference discloses a solenoid valve comprising a fluid control body 16 capable of being received in a fluid housing (the solenoid is a fuel injector for an engine) and having a "pressure supply passage" 20 at a first end and a radially

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extending "pressure control passage" 50, a "feed supply tube" 40 in a cavity of the control body with an outer diameter in communication with the pressure control passage (see Fig. 1) and an inner bore operably connected to the pressure supply passage (the inner bore and the pressure supply passage both receive the valve seat portion 17, see Fig. 1), the feed supply tube supported by a radially and axially extending wall segmented into longitudinally extending flow chambers (see Figs. 1 and 2) and having a valve receiving chamber area (area which supports valve seat portion 17, see Fig. 1), a valve seat portion 17 press fit into the control body (see Fig. 1) and having a valve seat portion 23 and a passage 22, a valve (26, 28, 29), and a solenoid (coils 13 and 14), but does not disclose that the valve seat portion is made of a metallic material. However, it would have been obvious to make the valve seat portion from a metallic material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Regarding claim 7, one passage is radially and the other is axial (see Fig. 1). Regarding claim 8, the valve includes ball 28. Regarding claim 12, although Greiner remains silent as to the material of the fluid control body, it would have been obvious to make the fluid control body from a polymer material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Regarding claim 13, the fluid control body 16 has an upper radially extending lip/rib (the positioning flange in the body 16, see Fig. 1).

Claims 2, 3, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greiner in view of Erickson.

Regarding claims 2 and 3, the Greiner valve further includes a casing member 1 and the solenoid further has a central axis and includes coils 13 and 14 wound on bobbins (see Fig. 1), but the coils do not have a radially stepped inner diameter receiving a portion/flux tube of the casing member. However, the Erickson reference discloses a similar valve whose coil has a radially stepped inner surface so that the bobbin may accommodate a portion/flux tube 64 of the casing member for improved precision in the location of the bobbin within the valve housing (see Fig. 3). It would have been obvious to employ radially stepped inner diameters on at least one of the coils and the associated bobbins accommodating a portion/flux tube of the casing member in the modified Greiner valve in view of Erickson for improved precision in the location of the bobbin within the valve housing. Regarding claim 10, the Greiner valve does not have a bobbin and coil overmolded in an integral unit with a connector. However, the Erickson valve has the bobbin 32 and coil 30 overmolded in an integral unit with connector member 34 (see Fig. 3) for simpler manufacturing and connection of the valve. It would have been obvious to modify the Greiner valve such that a bobbin and coil are overmolded in an integral unit with a connector member in view of Erickson for simpler manufacturing and connection of the valve.

### ***Conclusion***



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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Guglielmi, Fujimoto, and Ahn references disclose similar solenoid valves.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter deVore whose telephone number is 571 272-4884. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 571 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pdld

Peter deVore